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EVALUATION OF FREQUENCY DEPENDENT OF STRIPLINE ON DIELECTRIC SUBSTRATES

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The growing demand for portable devices with more reduced size and weight has stimulated the search for materials with high dielectric constant and low losses in the microwave frequency range allowing circuit integration and miniaturization. Accurate transmission line modeling is an essential step in high-speed interconnect design. The author's attention has been focused on the design items that are most crucial by achievement of satisfactory value of S-parameters and the impedance matching at the feeding ports in the extended frequency range from 0 GHz to 30 GHz with the relative electric permittiveness 3,38. A rigorous analysis of the resonant characteristics for a broad band waveguide by using the finite difference time domain method is presented. The use of FDTD method for the description of the electromagnetic behavior of the cell discontinuities in the analysis of the transmission and reflection coefficients, permits in the 0 GHz – 30 GHz frequency band the achievement of a good precision for the results on material with low electromagnetic characteristics.